

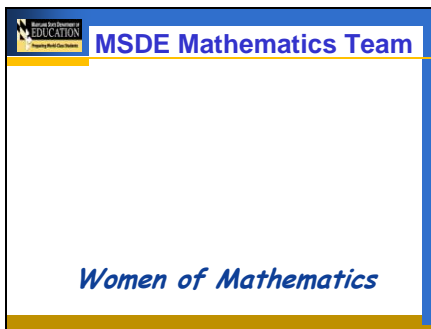
Slide 1



Welcome to our Mathematics Webinar designed as a follow-up from this summer's Educator Effectiveness Academy.

First, let me begin by thanking you for being a Mathematics leader at your school. Your participation in the academy this past summer and today's Webinar are very important as we look forward to reforming Maryland.

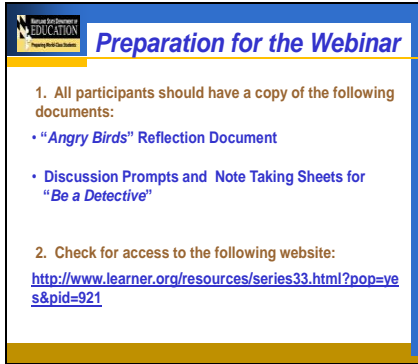
Slide 2



I would like to take a minute to introduce the specialists who have worked on this project, as well as all our other projects in Mathematics for Race To The Top, for Instruction and for Assessments.

Bette Kundert is the elementary Mathematics specialist concentrating on PreK-4. Marci Frye works at middle school. She's a middle school specialist focusing on grades 5 and 6. Karen Ross is also a middle school specialist and she leads our grades 7 and 8 work. High School is lead by Linda Kaniecki. She is our high school specialist. Additionally to our Race To The Top funds we have also hired Sara Reed who works side-by-side with Marci and Karen at middle school. Debbie Ward who is partners with Linda for the High School project. I'm Donna Watts. I have the privilege of being the Coordinator of Mathematics. My job focuses on policy and outreach for the department. Most importantly my job is to assist and provide guidance to the specialist working in Mathematics.

Slide 3



Preparation for the Webinar

1. All participants should have a copy of the following documents:
 - “Angry Birds” Reflection Document
 - Discussion Prompts and Note Taking Sheets for “Be a Detective”
2. Check for access to the following website:
<http://www.learner.org/resources/series33.html?pop=yes&pid=921>

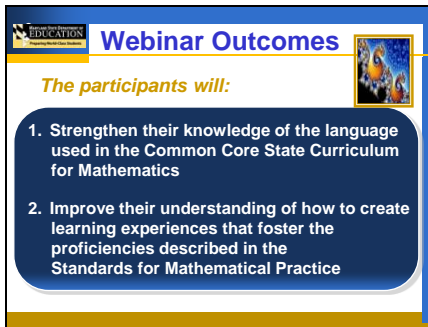
In an attempt to make this a more user friendly experience, we have developed several interactive activities. These activities make use of several websites and word documents.

Before proceeding, please make sure you have copies of the activity sheets for “Angry Birds” and “Be a Detective” activities.

You will also need access to the website listed below. If you haven’t confirmed you have access or you don’t have these documents please pause now and restart when you’re ready.

<http://www.learner.org/resources/series33.html?pop=yes&pid=921>

Slide 4



Webinar Outcomes

The participants will:

1. Strengthen their knowledge of the language used in the Common Core State Curriculum for Mathematics
2. Improve their understanding of how to create learning experiences that foster the proficiencies described in the Standards for Mathematical Practice

This slide lists the outcomes for the activities in this Webinar. The rationale for why we selected the stated outcomes is based on an important point made by David Sousa in his book “How the Brain Learns Mathematics.” Sousa discusses the fact that repeated practice, distributed over time is the key to retention.

Our hope is that the activities provided in this Webinar will help educators retain and even extend what they already know about the Common Core State Standards.

Slide 5



The Mathematics Webinar is divided into 3 distinct parts – a warm up activity and two other activities. In order to accommodate your busy professional schedules, we have created this Webinar in such a way that it can be viewed in one long session or in 2 to 3 shorter sessions. We hope this flexibility allows you to participate in and benefit from each session as fully as possible.

The warm up activity is a fun trivia game aimed at reviewing the structure and language of the Common Core State Standards.

Activity 2 is based on the wildly popular video *Angry Birds*. Now, I'll bet you are already wondering how a video game could possibly connect to Common Core!!! Especially to the Standards for Mathematical Practice!!! You'll simply have to be patient and stay tuned!!!

Activity 3, *Be a Detective*, is in response to the often-expressed request from Mathematics educators around our State to be provided with visual examples of student behaviors that indicate both teacher and student engagement in the Standards for Mathematical Practice.

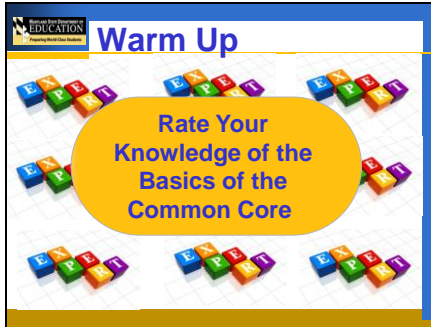
Slide 6

The slide, titled "Outcome for the Warm Up", contains the following text: *The participants will strengthen their knowledge of the language used in the Common Core State Standards for Mathematics.* Below the text are five small, identical square images, each containing a golden fractal pattern on a blue background.

Let's now turn to the warm up activity. The outcome is noted on your screen. It says:

The participants will strengthen their knowledge of the language used in the Common Core State Standards for Mathematics.

Slide 7



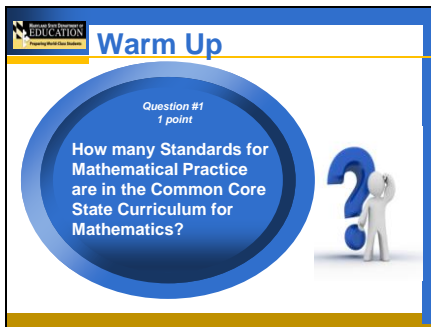
Ok, trivia enthusiasts it's time to put on your thinking caps.

Before starting however, each person should get a piece of paper or a white board where you can record your answers to the 9 questions in the trivia game. For extra enjoyment challenge yourself by competing with colleagues who are with you now to see who can accumulate the most points!

Each trivia question is appropriately timed for you to respond. The answers will be shared after a few seconds so you can check your work. Then the Webinar will automatically go to the next question. You'll notice that the trivia questions vary in difficulty and therefore are worth various point values. Award yourself points as appropriate for each question you answer correctly.

Let's get started and see how you stack up!!!

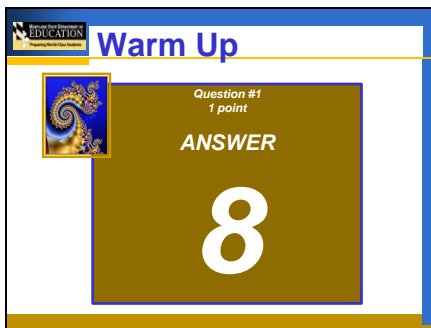
Slide 8



Question #1 for 1 point.

How many Standards for Mathematical Practice are in the Common Core State Curriculum for Mathematics?

Slide 9



For 1 point the correct answer is 8.


If you answered 8 award yourself 1 point.

Slide
10

WARM UP

Question #2
2 points

The Standards for Mathematical Practice should be fostered in students in what grades?



Question #2 for 2 points.

The Standards for Mathematical Practice should be fostered in students in what grades?

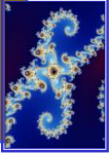
Slide
11

WARM UP

Question #2
2 points

ANSWER

PreK-12



The correct answer for 2 points is Pre K through 12!!


In other words all students should have daily opportunities to develop efficiency and practice in the Standards for Mathematical Practice.

Slide
12

WARM UP

Question #3
4 points

The focus of Standards for Mathematical Practice are a balance of _____ and _____?



Question #3

The focus of Standards for Mathematical Practice are a balance of _____ and _____?


Slide
13

WARM UP

Question #3
4 points

ANSWER

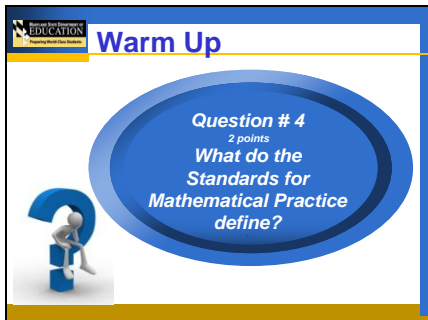
Mathematical understanding and procedural skill



For 4 points they are a balance of Mathematical understanding and procedural skill.

Now you may not have used these words exactly, but if you have the idea of understanding versus procedure versus skill give yourself 4 points.

Slide
15



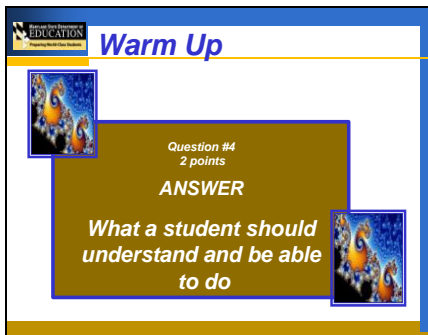
Warm Up

Question # 4
2 points
What do the Standards for Mathematical Practice define?

Question #4 for 2 points

What do the Standards for Mathematical Practice define?

Slide
16

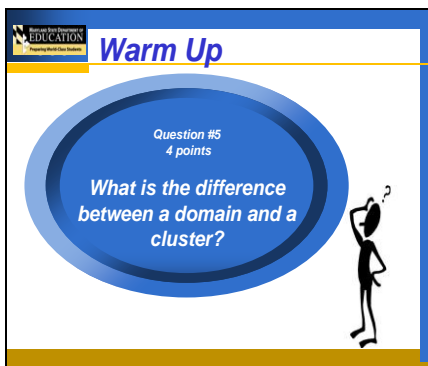


Warm Up

Question #4
2 points
ANSWER
What a student should understand and be able to do

The answer is What a student should understand and be able to do!

Slide
17



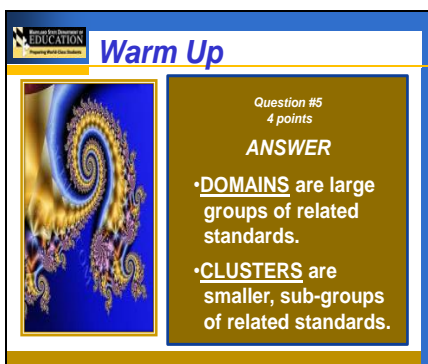
Warm Up

Question #5
4 points
What is the difference between a domain and a cluster?

The next question is question #5 for 4 points.

What is the difference between a domain and a cluster?

Slide
18



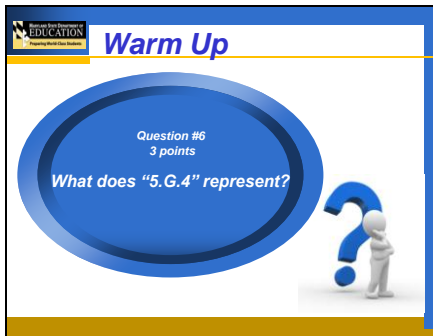
Warm Up

Question #5
4 points
ANSWER
•**DOMAINS** are large groups of related standards.
•**CLUSTERS** are smaller, sub-groups of related standards.

The answer:

DOMAINS are large groups of related standards.
CLUSTERS are smaller, sub-groups of related standards.

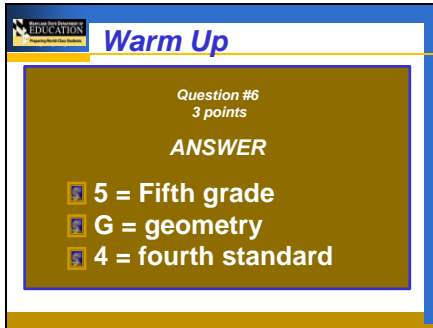
Slide
19



Question #6 for 3 points.

What does "5.G.4" represent?

Slide
20



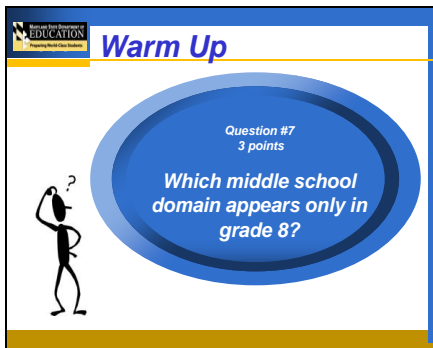
5.G.4 is the code for:

5 = Fifth grade!

G= geometry!

4 = Fourth standard!

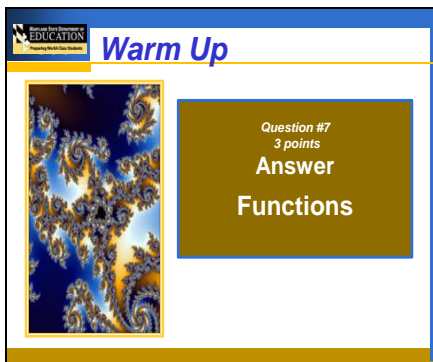
Slide
21



Question #7

Which middle school domain appears only in grade 8?

Slide
22



For 3 points the correct answer is Functions!

The Function domain.

Slide
23

WISCONSIN DEPARTMENT OF EDUCATION
Ensuring a bright future for every child

Warm Up

Question #8
8 points

Can you name ALL Standards for Mathematical Practice?

Note: This is NOT a "yes-no" question!

Question #8 for 8 points.

Can you name ALL Standards for Mathematical Practice? And by the way this is not a yes or no question. We are asking you to please name them all.

Slide
24

WISCONSIN DEPARTMENT OF EDUCATION
Ensuring a bright future for every child

Warm Up

Question #8
8 points

Answer

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Ok, here are all of the 8 Standards for Mathematical Practice:

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with Mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Slide
25

WISCONSIN DEPARTMENT OF EDUCATION
Ensuring a bright future for every child

Warm Up

Question #9
2 points

What are the names of two domains in Grade 7?

Question #9 for 2 points.

What are the names of two domains in Grade 7?

Slide
26

Warm Up

Question #9
2 points
ANSWER

Ratios and Proportional Relationships
The Number System
Expressions and Equations
Geometry
Statistics and Probability

You see them listed here. Any of the two are fine for 2 points.

- Ratios and Proportional Relationships
- The Number System
- Expressions and Equations
- Geometry
- Statistics and Probability

Slide
27

Warm Up

How do **YOU** rate on basic knowledge of the Common Core?
What was your score?

Rate Yourself:

30 to 25 **MASTER:** - Congratulations! YOU are a Master of the basics of CCSCM.

24 to 20 **INTERN:** YOU demonstrated a good foundation of the basics of CCSCM; a little fine tuning would help make you a MASTER.

< 20 **NOVICE:** YOU are off to a good start and might benefit from further review of CCSCM.

How do YOU rate on the basic knowledge of the Common Core?

How'd you do? Did you win the Gold medal, the Silver medal or the Bronze medal? Are you a Master? And Intern? Or a Novice?

Regardless of your score keep up the good effort.

- 30-25 Master! Congratulations! YOU are a Master of the basics of CCSCM.
- 24-20 Intern! YOU demonstrated a good foundation of the basics of CCSCM; a little fine tuning would help make you a MASTER.
- <20 Novice! You are off to a good start and might benefit from additional study of the CCSCM.

Slide
28

End of Activity 1

This is the end of the first activity. If you are planning to watch this in 3 sessions, this is a good place to stop the Webinar.

Otherwise, let's keep going!

Slide
26

EDUCATION
Maryland Department of Education

"Angry Birds"



**What can
"Angry Birds"
teach us about
the Standards
for
Mathematical
Practice?**

Welcome to the second activity.


This activity is designed to help you continue your growth in understanding of the Standards for Mathematical Practice. You will have an opportunity to connect between these Standards and comments expressed on Dan Meyer's blog entitled "Five Lessons on Teaching from Angry Birds that Have Nothing Whatsoever to do with Parabolas." Even though this particular activity has nothing to do with parabolas it does have a lot to do with the Standards for Mathematical Practice!

Slide
27

EDUCATION
Maryland Department of Education

Outcome for "Angry Birds"

The participants will increase their familiarity with the Standards of Mathematical Practice.



Many of the activities from this past summer's Educator Effectiveness Academies targeted the Standards for Mathematical Practice.

Local school systems have been encouraged to begin implementing the Practices Standards during the current school year.


Because this is a new initiative, Maryland educators may be at varying stages of developing a deep understanding of the Practices. Readiness with the Practices, influence the types and quality of learning experience that educators should incorporate into daily lessons.

This activity was designed as a reflective activity. To make it more engaging, we are going to use the video game *Angry Birds* as a starting point.

Slide
28

EDUCATION
Maryland Department of Education

"Angry Birds"



Dan Meyer taught high school mathematics for six years. He is currently studying Mathematics Education at Stanford University.

Dan Meyer's Blog
Five Lessons on Teaching From Angry Birds That Have Nothing Whatsoever to Do with Parabolas.

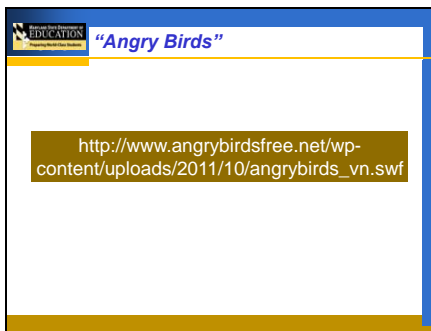
One of the final activities for Mathematics teachers at the Academy last summer was to watch and reflect on a video of Mathematics teacher, Dan Meyer, delivering a speech entitled "The Math Classroom Needs a Makeover."

Today, we are going to call on Dan once again. He has graciously allowed us to share his thoughts on the importance of the game *Angry Birds* to enhance student proficiencies in the Standards

for Mathematical Practice.

Through a post on his Blog, Dan uses *Angry Birds* to encourage a discussion among educators that focuses on what they can learn about teaching by analyzing the design of this video game.

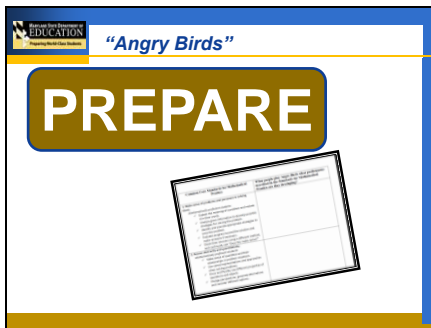
Slide
29



If you are not familiar with *Angry Birds*, you might want to *PAUSE* the Webinar and take a few minutes to visit the Angry Birds website and get to know the game.

http://www.angrybirdsfree.net/wpcontent/uploads/2011/10/angrybirds_vn.swf

Slide
30



Also, make sure you have a copy of the *Angry Birds Reflection* document before you begin this activity.

Slide
31



In these next few slides we suggest what a teacher might do with an activity to make Mathematics more accessible to students. After that you will be asked to determine how an activity like *Angry Birds* creates an environment that enables students to engage the Standards for Mathematical Practice.

Dan Meyer has shared a number of observations about *Angry Birds* which are applicable to the tasks you assign your students, though the applications will vary from class to class and concept to concept.

Notice, there's a huge button in the middle "Play." By contrast, how often do your students look at their assignments and say, "I don't know

Slide
32



what I'm supposed to be doing".

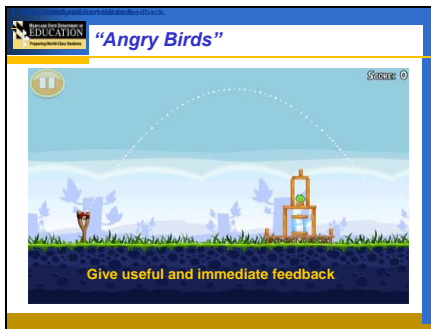
The first observation highlights the importance of making a task easy to start.

Angry Birds was designed in Finland. The game is sold all over the world. That creates an enormous design challenge.

Imagine you had to make Mathematics clear to students who don't speak any English. How many students would be successful in your class?

Therefore, when we work with students we need to remember to **show**, not just **tell** how.

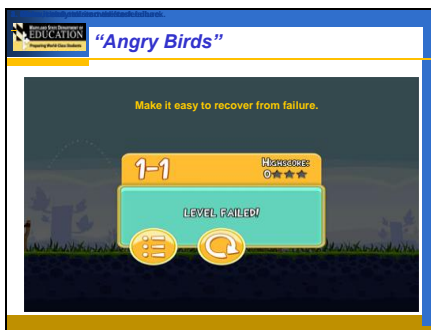
Slide
33



The importance of feedback, not parabolic motion, is what we should learn from the trails the birds leave behind. When you miss, you can easily re-adjust. The trails help you quickly learn the power of the slingshot and the mass of the birds.

What kind of feedback do we offer students while they're learning Mathematics? Is it useful and immediate, or vague and delayed?

Slide
34



Finally, after your birds get defeated, you only have to experience failure as long as it takes you to press the huge undo arrow. Once you're successful, that's ALL the game remembers. Your losses are not stored anywhere. They are not weighted against your successes when the game tallies your final score.

Slide
35



Message #5 Is a little bit different.

You're always flinging birds at pigs. As you master one kind of bird, though, you get new ones with different capabilities. The levels get harder. You can get away with a lot of imprecision in early levels but later on you have to be accurate down to a few pixels. This all happens gradually, with enough overlap that you head into each new task with a sense of confidence and determination.

As educators do we properly scaffold learning experiences to allow student to develop a strong foundation upon which to build future learning?

Slide
36



Now it's time for you to do some work.

While Dan Meyer's message gives us something to think about when we reflect on our teaching practices, we want to look at *Angry Birds* and other video games in another way.

Reflect on behaviors displayed by a person when playing a video game over and over again in an attempt to conquer each level.

For Activity 2, we would like you to use the Angry Birds reflection sheet to record your thoughts about how the behaviors displayed by a person attempting to beat a video game connect to the proficiencies described in the Standards for Mathematical Practice.

Slide
37

"Angry Birds"	
REFLECT	
<p>Common Core Standards for Mathematical Practice</p> <p>1. Make sense of problems and persevere in solving them.</p> <p>Mathematically proficient students:</p> <ul style="list-style-type: none">✓ Explain the meaning of a problem and restate it in their words.✓ Analyze given information to develop possible strategies for solving the problem.✓ Identify and execute appropriate strategies to solve the problem.✓ Evaluate progress toward the solution and make revisions if necessary.✓ Check their answers using a different method, and continually ask "Does this make sense?"	<p>When people play Angry Birds what proficiencies described in the Standards for Mathematical Practice are they developing?</p> <p>• <i>When a person plays a game for the 1st time they look for an entry point into how to solve the problem.</i></p> <p>• <i>When a person fails to conquer a level they persevere and try again learning from their mistakes</i></p>

A sample response is shown in column 2 of the table displayed on this slide.

There are many, many responses. The entries on this slide just serve to offer an example of what we would like you to produce.

Slide
38



When all of the participants in your group have had an opportunity to complete the reflection sheet, please take time to have each participant share his/her thoughts.

To summarize, participants should share how the design of the learning experiences that they provide for students could parallel the positive aspects of video game design.

Please *PAUSE* the Webinar now for your discussion.

Slide
39

EDUCATION
Preparing Mind for Learning

"Angry Birds"

**S
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A
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Y**

Practice #1
Make sense of problems and persevere in solving them.
People make revisions on how they play a video game based on what worked and didn't work in each attempt at a level

Practice #2
Reason abstractly and quantitatively.
The discovery of what different characters do and how to use them most effectively

Knowing that some viewers of this Webinar might be alone we wanted to provide a few sample responses to consider.

This slide offers a few connections for Practices 1 and 2. Please take a moment to look at this slide and the next 3 slides for some of our ideas.

Practice #1

Make sense of problems and persevere in solving them.

People make revisions on how they play a video game based on what worked and didn't work in each attempt at a level.

Practice #2

Reason abstractly and quantitatively.

The discovery of what different characters do and how to use them most effectively.

Slide
40

EDUCATION
Preparing Mind for Learning

"Angry Birds"

3. Construct viable arguments and critique the reasoning of others.
When stuck on a level a person might seek clues from a person who has cleared the level.

4. Model with mathematics.
In the case of "Angry Birds" a person might analyze the shape of the parabola needed to attack different areas of the fortress.

Practice # 3

Construct viable arguments and critique the reasoning of others.

When stuck on a level a person might seek clues from a person who has cleared the level.

Practice #4

Model with Mathematics.

In the case of "Angry Birds" a person might analyze the shape of the parabola needed to attack different areas of the fortress.

Slide
41

EDUCATION
Preparing Mind for Learning

"Angry Birds"

5. Use appropriate tools strategically.
Again in the case of Angry Birds, a person would use the attributes of the different birds to their advantage.

6. Attend to precision.
As the levels increase in difficulty, the need for accuracy becomes more essential.

Practice #5

Use appropriate tools strategically.

Again in the case of Angry Birds, a person would use the attributes of the different birds to their advantage.

Practice #6

Attend to precision.

As the levels increase in difficulty, the need for accuracy becomes more essential.

Slide
42

EDUCATION
Learning Math Concepts

"Angry Birds"

7. Look for and make use of structure.
When playing Angry Birds it is necessary to analyze the structure of the pig's fortress to determine where it is most vulnerable

8. Look for and express regularity in repeated reasoning.
When playing a game and observing a particular strategy produces a desired result over and over again and then using such an observation to take a short cut.

Practice #7

Look for and make use of structure.

When playing Angry Birds it is necessary to analyze the structure of the pig's fortress to determine where it is most vulnerable.

Practice #8

Look for and express regularity in repeated reasoning.

When playing a game and observing a particular strategy produces a desired result over and over again and then using such an observation to take a short cut.

Slide
43

EDUCATION
Learning Math Concepts

"Angry Birds"



SUMMARY

People, who play video games for an extended length of time, certainly persevere. They try the game over and over again each time taking lessons from what they learned when they failed to conquer a level. As can be seen from *Angry Birds*, we can grow in our mathematical thinking and problem-solving ability through real-life experience and EVEN games.

Often, the game structure provides an environment of support that leads to confidence and new knowledge. In fact, it is that type of environment in which the Standards for Mathematical Practice are valuable tools that when implemented promote success.

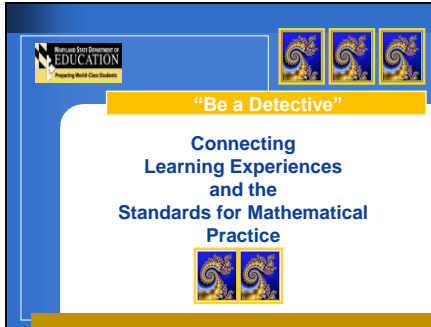
This is the end of the Activity 2. If you are watching the Webinar in sections, this is a good place to stop.

Slide
44

EDUCATION
Learning Math Concepts

End of Activity 2

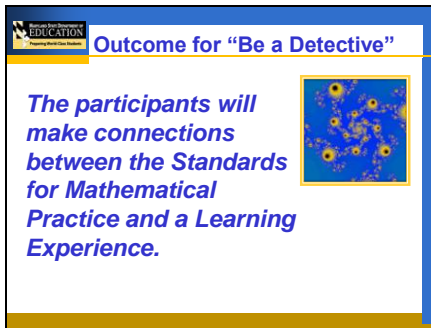
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45



This is the final activity of the Webinar.

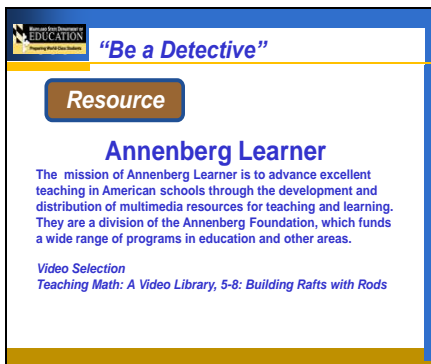
You will watch a video from the Annenberg Foundation in order to make connections between the Standards for Mathematical Practice and an actual classroom learning experience.

Slide
46



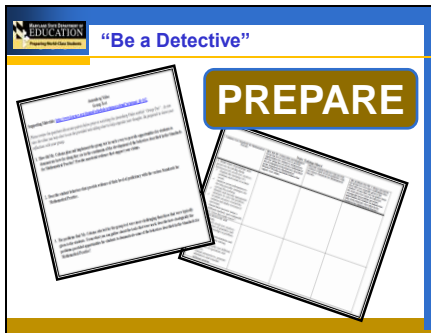
The participants will make connections between the Standards for Mathematical Practice and a learning group theory are the outcome for our third activity.

Slide
47



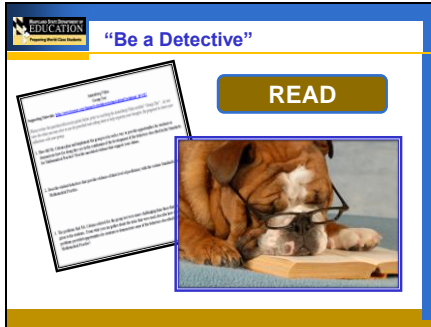
The mission of the Annenberg Learner is to advance excellent teaching in American schools. We are using part of the Annenberg Learning Experience with our video that we are going to use today called, "Building Rafts with Rods".

Slide
48



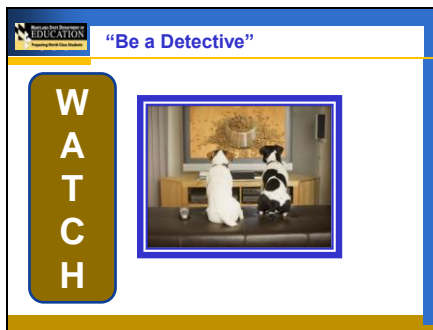
Before beginning this activity, be sure each participant has a copy of the 2 documents you will need: the discussion prompts for "Building Rafts with Rods" and an accompanying "Note Taking Sheet".

Slide
49



Please read the 3 discussion prompts below prior to watching the Annenberg Video entitled “Building Rafts with Rods.” As you view the video you can use the note taking sheet to help organize your thoughts. Be prepared to share your reflections with your group.

Slide
50



Now it is time to *PAUSE* the Webinar and turn your attention to the video **Teaching Math: Building Rafts with Rods**. As you watch the video, answer the three discussion prompts.

Slide
51



To access the appropriate clip

- Go to the website displayed below and on the slide

<http://www.learner.org/resources/series33.html?pop=yes&pid=921>

Step 1: access the website shown above:

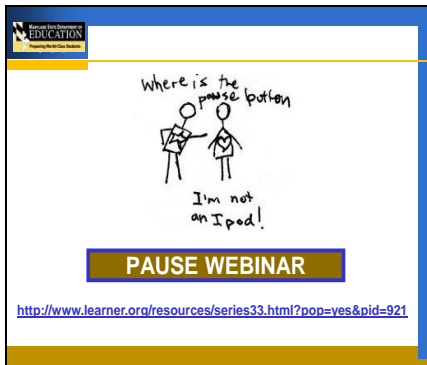
Step 2: Under individual program descriptions, select clip #6 entitled, “Building Rafts with Rods” by clicking on the VOD button.

Step 3: Turn on closed captioning if needed.

Step 4: The video should pop-up in a separate window.

As you watch this video clip look at what the teacher is doing, what the students are doing and how the task is structured. Make note of how various interactions provide evidence of a connection to the Standards for Mathematical Practice.

Slide
52



Please *PAUSE* the Webinar and access the link noted on the slide.

(If you need closed captioning, please click on the white box that is labeled CC located under the TV screen on the video)

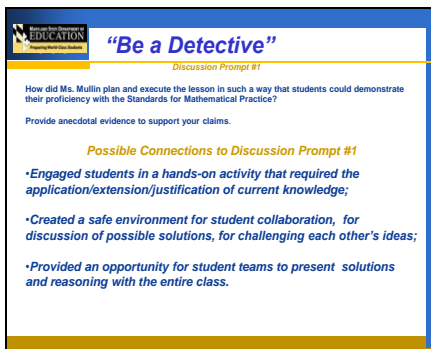
Slide
53



Discuss your reactions to the video and respond to the three prompts.

(Please pause the Webinar and discuss the video at this time)

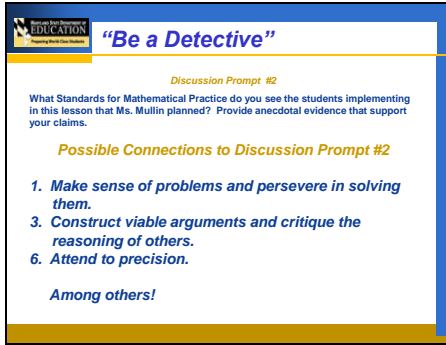
Slide
54



Let's start with Discussion Prompt #1:

Here are some possible connections although you certainly may have already discovered additional responses during your discussion. The teacher had already taught them about surface area, and volume of a rectangular prism, and linear graphing which allowed students to solve new problems. The teacher had set an expectation of respect and collaboration with the students. Desks were arranged for group communication so that students could construct valuable arguments and critique each other's reasoning. The teacher had set the tone for the whole class sharing.

Slide
55



EDUCATION
Learning Standards for Mathematical Practice

"Be a Detective"

Discussion Prompt #2

What Standards for Mathematical Practice do you see the students implementing in this lesson that Ms. Mullin planned? Provide anecdotal evidence that support your claims.

Possible Connections to Discussion Prompt #2

1. *Make sense of problems and persevere in solving them.*
3. *Construct viable arguments and critique the reasoning of others.*
6. *Attend to precision.*

Among others!

Discussion Prompt#2: Our focus on Standard #1

All students seem comfortable with working through the problems. They were all focused on the tasks at hand and seemed self motivated. When they needed to change directions after a comment from another student, they just took it in stride and kept on working.

Students had to analyze given information to develop possible strategies for solving the problem. Students were guiding each other through the problem and were responding to the teachers input.

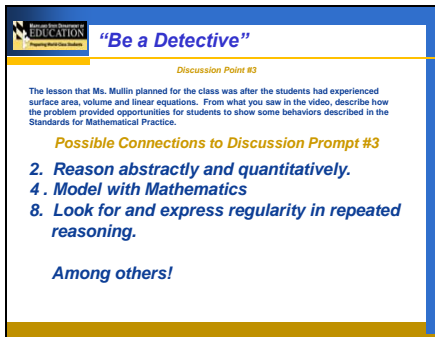
Standard #3

Students shared their work with whole class so that they could see different strategies for solving the problems.

Standard #6

Students checked formulas to make sure they were accurate and provided correct volumes and surface areas for each stage as the raft grew.

Slide
56



EDUCATION
Learning Standards for Mathematical Practice

"Be a Detective"

Discussion Prompt #3

The lesson that Ms. Mullin planned for the class was after the students had experienced surface area, volume and linear equations. From what you saw in the video, describe how the problem provided opportunities for students to show some behaviors described in the Standards for Mathematical Practice.

Possible Connections to Discussion Prompt #3

2. *Reason abstractly and quantitatively.*
4. *Model with Mathematics*
8. *Look for and express regularity in repeated reasoning.*

Among others!

Discussion Prompt #3:

Standard #2

They used the rods to think abstractly and then they reasoned to think quantitatively. They used the meaning of the quantities they found to come up with a correct formula for both surface area and volume.

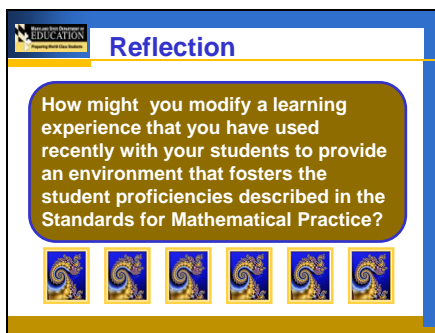
Standard #4

They identified important quantities in the situation. They used graphs and formulas and recorded their findings in a table. They analyzed the number of rods at each stage and drew conclusions about surface area and volume.

Standard #8

When groups shared with the class students could see how other students approached the

Slide
57



Slide 57 features a blue header with the "National Center for Education" logo and the title "Reflection" in blue. The main content is a yellow rounded rectangle containing the text: "How might you modify a learning experience that you have used recently with your students to provide an environment that fosters the student proficiencies described in the Standards for Mathematical Practice?". Below the text are six small, identical square icons with a blue and yellow spiral pattern.

problem differently thus they saw repeated reasoning presented in different ways. For example some did a bar graph, some used a coordinate axes to graph a linear function, some compared surface area to volume, some compared rods to volume and rods to surface area.

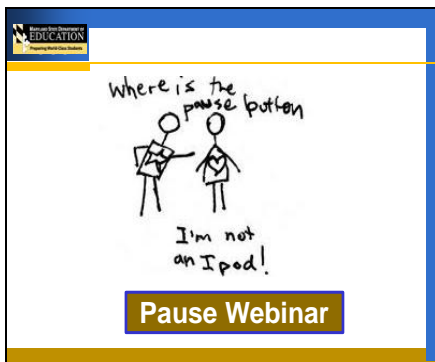
Reflection:

Based on the classroom experience you just saw in the video, think about an experience you have used and modified or one you now realize how you **could** modify to help students continuously develop proficiency with the Standards for Mathematical Practice.

At the end of the modified classroom experience, how did you know or how would you know that the students had depended on and used the practices? What evidence would you want to gather as proof? What student behaviors would you expect to see that would allow you to declare your lesson a success with the practices?

After reflecting for a while, share with someone sitting next to you. Or jot down your thoughts on paper.

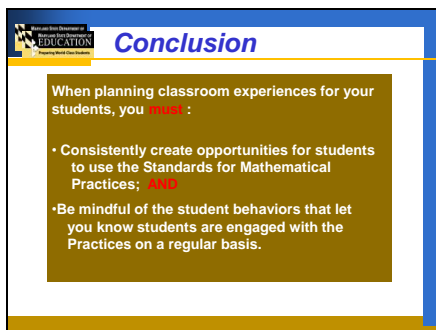
Slide
58



Slide 58 features a blue header with the "National Center for Education" logo. The main content is a white area with a hand-drawn cartoon of two stick figures. One figure is pointing to the other's chest and saying, "Where is the pause button". The other figure responds, "I'm not an iPod!". At the bottom of the slide is a blue button with the text "Pause Webinar" in white.

Once again, *PAUSE* the video to give yourself time to reflect and share the learning experience you might modify.

Slide
59



Slide 59 is titled "Conclusion" in blue text. It features a yellow background with a blue border. The text on the slide reads: "When planning classroom experiences for your students, you **must** :

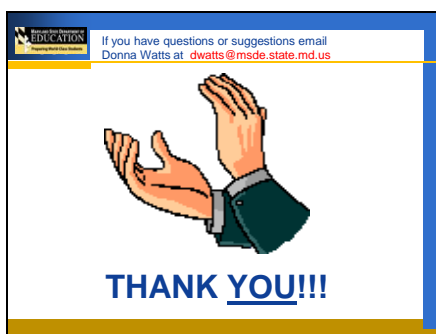
- Consistently create opportunities for students to use the Standards for Mathematical Practices; **AND**
- Be mindful of the student behaviors that let you know students are engaged with the Practices on a regular basis.

Conclusion:

As we have seen from the video, the classroom learning experiences we create must be a conscious effort to make sure students have daily opportunities to grapple, persevere, critique their own work and that of peers, justify their reasoning, synthesize new information, come to conclusions, model, apply abstract thinking to specific scenarios, and the various other proficiencies discussed in the eight Standards for Mathematical Practices.

Having the students apply these standards will make the lessons engaging and active and a great opportunity for learning for our students.

Slide
60



Slide 60 is titled "THANK YOU!!!" in blue text. It features a yellow background with a blue border. The text on the slide reads: "If you have questions or suggestions email Donna Watts at dwatts@msde.state.md.us". Below the text is an illustration of two hands, one palm up and one palm down, in a gesture of thanks. The hands are orange with blue sleeves.

Thank you for joining the MSDE Mathematics Team in this first follow-up Webinar for Mathematics. Please know how much we value the work you do with students and your colleagues to include in instruction in Mathematics in Maryland. We hope that this Webinar not only refreshed your memory from this summer's Educator Effectiveness Academy but also added to your knowledge of the Common Core State Standards.

So what happens next?

A spring follow-up Webinar will be produced and made available this coming April 2012. We will keep you posted.

In addition, the "Women of Mathematics" are busily planning and preparing for the second round of Maryland Educator Effectiveness Academies to be conducted throughout the state this summer 2012.

If you have any suggestions to improve this Webinar or the summer academy experience, or would like suggest an activity that we might want to consider. Please email me at the address at the

top of the slide.

Today's Webinar is now finished those of us in the Office of Mathematics again would like to thank you for your dedication to the teaching and learning of Mathematics in Maryland.